

said input capacitance and for providing a voltage output that corresponds to the strength of said electrical potential difference

characterized in that the capacitance that can exist between the source surface and the voltage sensing means is sufficient so that, when the pickup electrode is placed adjacent the source surface, the change in the capacitive coupling between the voltage sensing means and the source surface arising from a change in the separation distance between the pickup electrode and said surface varies insensitively with displacement of the electrode towards or away from the surface whereby, upon variation of the separation distance between the source surface and the pick-up electrode, the overall, effective capacitance formed in use between said source surface and the voltage sensing means through the pick-up electrode is such that the change in capacitance is no greater than 50 percent when subjected to a 0.1 mm increase in said separation distance, and wherein the voltage sensing means has an input resistance that, when combined with the capacitance that can exist between the source surface and the voltage sensing means through the pick-up electrode, provides an RC filter with a low-frequency cut-off of at least 0.05 hertz.

38. (Amended) A method of sensing an electrical potential difference present over a surface comprising:

- (1) presenting a pickup electrode to confront said surface and to establish a capacitive coupling to said surface and receive a signal based upon the electric field emanating therefrom;
- (2) applying the signal so received to a voltage divider network which includes at one end the pick-up electrode and at another end an electrical coupling means connected to another portion of the surface over which an electrical potential difference exists, there being a high impedance amplifier with an input capacitance connected in series within said voltage divider network, the high impedance amplifier having an input resistance that, when combined with the capacitance that can exist between said surface and the high impedance amplifier through the pick-up electrode, provides an RC filter with a low-frequency cut-off of at least 0.05 hertz;;

(3) maintaining the pickup electrode at a spaced separation from the confronted, field-emanating surface so that the overall effective capacitance between said surface and said amplifier has a value in the region of a plot of capacitance value versus separation distance wherein the percentage change in capacitance is no greater than 50 percent when subjected to a 0.1 mm increase in the separation distance occurring between the pick-up electrode and the confronted surface whereby a signal is provided to the amplifier to provide an amplifier output voltage that corresponds to the strength of said electrical potential difference, and wherein the capacitive coupling between the field-emanating surface and the amplifier through the pickup electrode varies insensitively with displacement of the electrode away from said surface.

Attached is Schedule A showing the changes to claims 22 and 38.

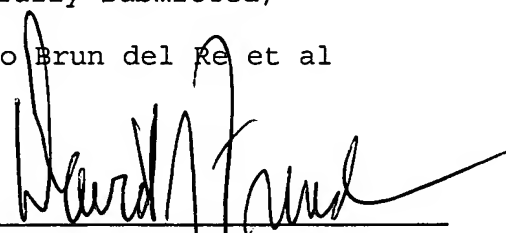
Remarks

The amended claims are being filed in conjunction with the inventors' declarations accompanying this response.

Respectfully submitted,

Riccardo Brun del Re et al

per


David J. French
Reg. No. 31229

P.O. Box 2486, Stn. D
Ottawa, Canada K1P 5W6
Telephone: (613) 567-6824 x232 x 231
Telefax: (613) 567-4689